Background

- Glioblastoma (GBM) is the most common type of adult brain tumor accounting for 16% of all functional brain tumors or 46% of all intracranial tumors.1
- The global incidence of GBM is 3.4 cases per 100,000 cases and renovascular system cancers account for 1.1% of all cancer cases in the U.S and 1.5% worldwide.2
- GBM is a highly deadly disease with median survival time reported to 6–12 months. Among newly diagnosed patients, median survival is approximately 15 months from the time of diagnosis and 5% of patients are alive 5 years from their diagnosis.3
- GBM is a unmeteorized small current area to treat given that it is highly resilient and that the lack of translated capacity for self-repair can result in patients experiencing 2–7 years of median survival.4
- Patients with recurrent GBM experience worse overall survival (OS) than patients with primary GBM and corresponding determinants in quality of life (QoL) and neurocognitive function (NCF).5

Objective

- To summarize OS, QoL, and NCF among patients with recurrent GBM based on systematically identified studies.

Methods

- A systematic literature review (SLR) was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines for searching, performing, and reporting SLR.6
- Searches were performed in MEDLINE, MEDLINE in Progress, EMBASE, and the Cochrane Library.
- Publications were limited to those reporting information on OS, QoL, or NCF among adult patients with recurrent GBM that were published in English between January 2005 and October 2014. Publications meeting any of the exclusion criteria outlined in Figure 1 were excluded.
- Publications were subjected to two levels of screening:
  - Level I: Study inclusion was determined based on the inclusion criteria of the publication.
  - Level II: Study inclusion was determined based on the full text of the publication.
- OS, QoL, and NCF-related outcomes were extracted systematically from all included studies after Level II criteria were met.

Results

Systematic Literature Review

- Fifty-four publications reporting OS outcomes were identified among the 10,111 publications screened. Of these, two publications provided data from the EORTC study, and five provided data from the NABTT study. After removing duplicate publications, there was a total of 66 unique publications.
- A total of eight publications reporting OS outcomes were identified among the 10,111 publications screened (Table 1).

OS Outcomes

- Based on randomized controlled trials (RCTs), median OS ranged from 9–12 months with targeted therapy, from 5–9 months with chemotherapy, and from 5–6 months with targeted therapy + chemotherapy.
- Patients who were treated with a targeted agent among these patients were 7–12 months.
- Based on non-RCTs, median OS ranged from 3–12 months with chemotherapy, from 7–12 months with targeted therapy, from 5–9 months with chemotherapy + targeted therapy, from 5–12 months with chemotherapy + targeted therapy + chemotherapy, from 5–12 months with chemotherapy + targeted therapy + chemotherapy, from 5–9 months with chemotherapy + targeted therapy + chemotherapy, and from 5–12 months with chemotherapy + targeted therapy + chemotherapy.

QoL and NCF-Related Outcomes

- For OS and QoL-related outcomes, instruments used to assess QoL among patients with recurrent GBM included the European Organisation for Research and Treatment of Cancer (EORTC) Core Quality of Life Questionnaire (EORTC QLQ-C30), the Brain Tumor Module (EORTC QLQ-BRM29), and the Survival Brain Tumor Questionnaire (EORTC QLQ-BRM29).
- The Hopkins Vertical Longitudinal Health Survey (HVLSF), the True Health Test (THT), and the Neurocognitive Function Assessment (NECOFA) were used in one study to assess NCF.

Conclusions

- OS or QoL improvements may have been more likely to have been published than studies reporting OS or QoL outcomes that were not published in English or within the predefined 10-year timeframe that were not reported in this SLR.
- Results were summarized as required without statistical comparisons between studies or treatments.

Limitations

- Conclusions may be limited by the availability of published literature. For example, studies reporting OS or QoL improvements may have been more likely to have been published than studies reporting OS or QoL outcomes that were not published in English or within the predefined 10-year timeframe that were not reported in this SLR.

References


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